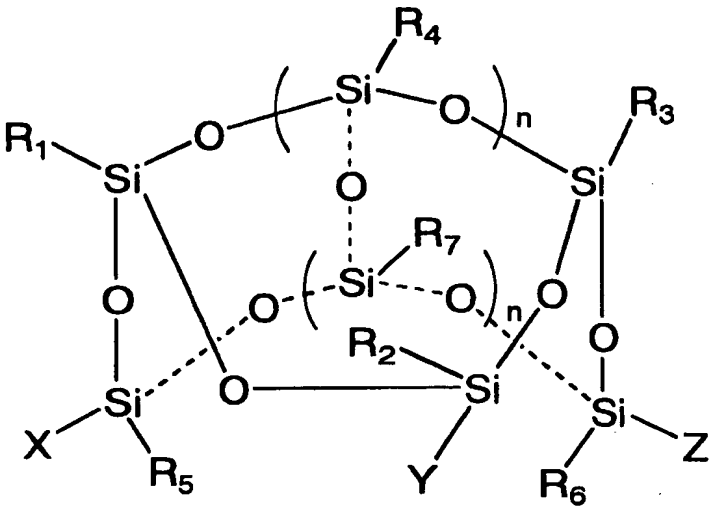
What is claimed is:

1. An insulating-film forming material comprising a polymer (A) that has, as a repeating unit thereof, a structure represented by the following general formula (I):

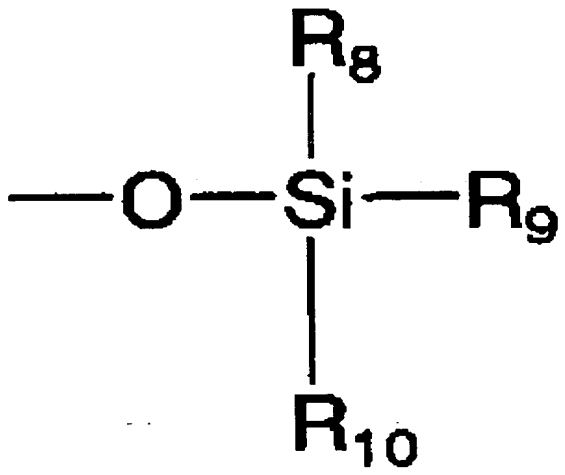


(I)

wherein R_1 to R_7 are the same or different, and each represents a monovalent group;

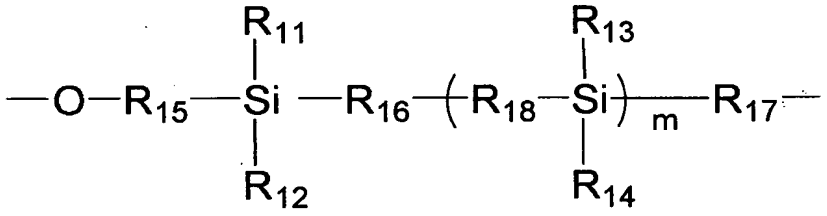
one of X, Y and Z represents a group represented by formula (IA), and another one of X, Y and Z is -O-, and the other one of X, Y and Z is a group represented by formula (IB) wherein the oxygen atom that directly bonds to the silicon atom in formula (IB) is also connected to formula (I); and

n indicates an integer of from 1 to 10:



(IA)

wherein R_8 to R_{10} are the same or different, and each represents a monovalent group,



(IB)

wherein R_{11} to R_{14} are the same or different, and each represents a monovalent group;

R_{15} to R_{17} are the same or different, and each represents a single bond or a divalent group;

R_{18} represents a single bond or -O-; and

m indicates an integer of from 0 to 10.

2. The insulating-film forming material as claimed in claim 1, wherein R_1 to R_{14} in formula (I) are the same or different,

and each represents a hydroxyl group, a monovalent hydrocarbon group, a monovalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction, a group derived from a monovalent hydrocarbon group by substituting a part of the carbon atom(s) in the monovalent hydrocarbon group with a silicon atom, or a group derived from a monovalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction, by substituting a part of the carbon atom(s) in the monovalent group with a silicon atom, and R_{15} to R_{17} are the same or different, and each represents a single bond, a divalent hydrocarbon group, or a divalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction.

3. The insulating-film forming material as claimed in claim 2, wherein at least one of R_1 to R_{17} in formula (I) satisfies at least one of the following conditions (i) to (iii):

at least one of R_1 to R_{17} includes at least one of

(i) at least one carbon-carbon triple bond;

(ii) at least one of a carbon-carbon double bond and a carbon-nitrogen double bond that conjugates with an aromatic group; and

(iii) at least one aromatic ring having at least 10 carbon atoms.

4. An insulating film obtained by using an insulating-film forming material as claimed in claim 1.

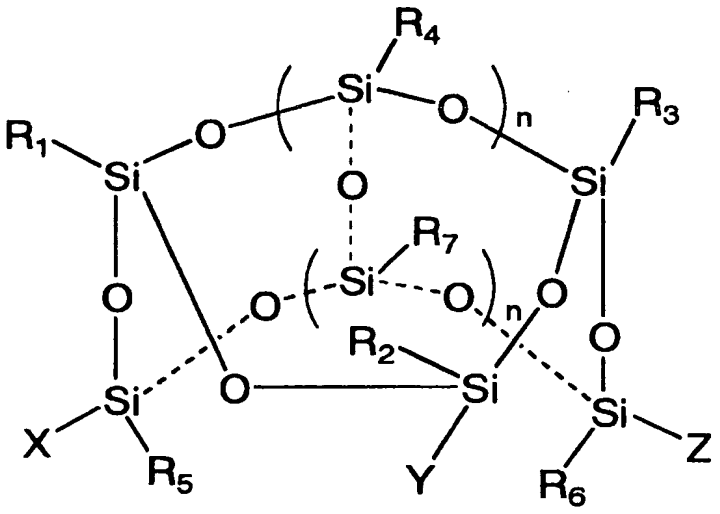
5. A porous insulating-film forming material comprising:

a polymer that has, as a repeating unit thereof, a structure represented by formula (I); and

at least one of a compound (B-1) and particles (B-2),

(B-1) a compound having a boiling or decomposition point of 250°C to 450°C,

(B-2) hollow particles:



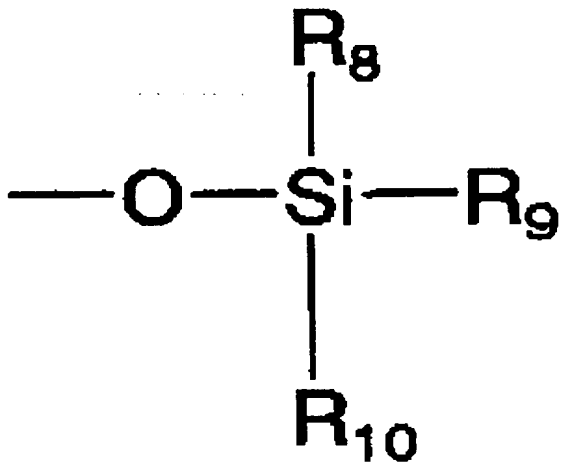
(I)

wherein R_1 to R_7 are the same or different, and each represents a monovalent group;

one of X, Y and Z represents a group represented by formula (IA),

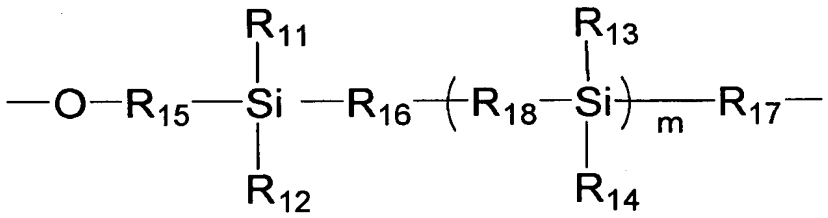
and another one of X, Y and Z is -O-, and the other one of X, Y and Z is a group represented by formula (IB) wherein the oxygen atom that directly bonds to the silicon atom in formula (IB) is also connected to formula (I); and

n indicates an integer of from 1 to 10:



(IA)

wherein R_8 to R_{10} are the same or different, and each represents a monovalent group,



(IB)

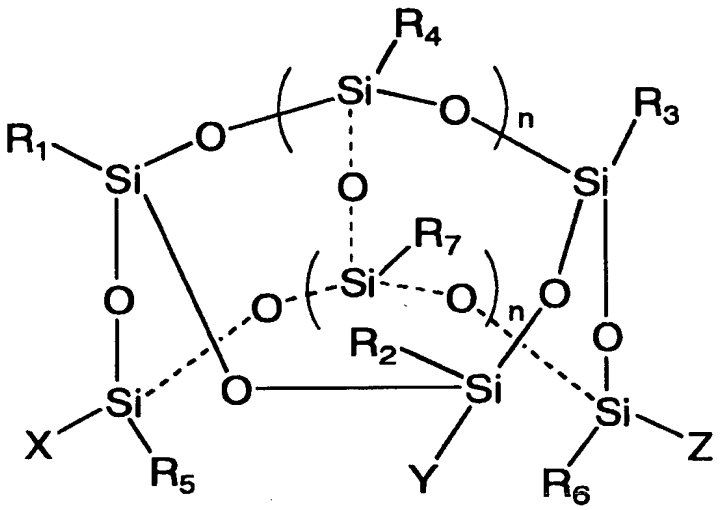
wherein R_{11} to R_{14} are the same or different, and each represents a monovalent group;

R_{15} to R_{17} are the same or different, and each represents a single bond or a divalent group;

R_{18} represents a single bond or -O-; and

m indicates an integer of from 0 to 10.

6. A porous insulating-film forming material comprising a polymer that has, as a repeating unit thereof, a structure represented by formula (I'):

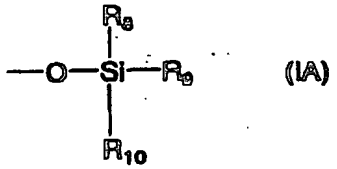


(I')

wherein R_1 to R_7 are the same or different, and each represents a monovalent group;

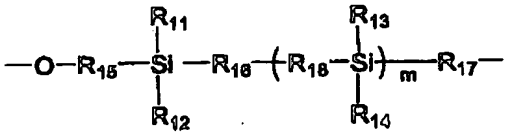
one of X, Y and Z represents a group represented by formula (IA), and another one of X, Y and Z is -O-, and the other one of X, Y and Z is a group represented by formula (IB) wherein the oxygen atom that directly bonds to the silicon atom in formula (IB) is also connected to formula (I); and

n indicates an integer of from 1 to 10:



(IA)

wherein R_8 to R_{10} are the same or different, and each represents a monovalent group,



(IB)

wherein R_{11} to R_{14} are the same or different, and each represents a monovalent group;

R_{15} to R_{17} are the same or different, and each represents a single bond or a divalent group;

R_{18} represents a single bond or -O-; and

m indicates an integer of from 0 to 10; and at least one of R_1 to R_{14} satisfies at least one of the following conditions (a) to (c):

at least one of R_1 to R_{14} includes at least one of

(a) a structure that decomposes under heat at 250°C to 450°C to generate gas;

(b) a structure that decomposes through UV irradiation to generate gas; and

(c) a structure that decomposes through electron beam irradiation to generate gas.

7. The porous insulating-film forming material as claimed in claim 5, wherein at least one of R_1 to R_{17} in formula (I) satisfies at least one of the following conditions (α) and (β):

(α) at least one of R_1 to R_{14} is a monovalent hydrocarbon group, a monovalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction, a group derived from a monovalent hydrocarbon group by substituting a part of the carbon atom(s) in the monovalent hydrocarbon group with a silicon atom, or a group derived from a monovalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction, by substituting a part of the carbon atom(s) in the monovalent group with a silicon atom; and

(β) at least one of R_{15} to R_{17} is a divalent hydrocarbon group, or a divalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction.

8. The porous insulating-film forming material as claimed in claim 6, wherein at least one of R_1 to R_{17} in formula (I') satisfies at least one of the following conditions (α) and (β):

(α) at least one of R_1 to R_{14} is a monovalent hydrocarbon group,

a monovalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction, a group derived from a monovalent hydrocarbon group by substituting a part of the carbon atom(s) in the monovalent hydrocarbon group with a silicon atom, or a group derived from a monovalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction, by substituting a part of the carbon atom(s) in the monovalent group with a silicon atom; and

(β) at least one of R_{15} to R_{17} is a divalent hydrocarbon group, or a divalent group capable of becoming a hydrocarbon group through a Diels-Alder reaction followed by an elimination reaction.

9. The porous insulating-film forming material as claimed in claim 5, wherein at least one of R_1 to R_{17} in formula (I) satisfies at least one of the following conditions (i) to (iii):

at least one of R_1 to R_{17} includes at least one of

(i) at least one carbon-carbon triple bond;

(ii) at least one of a carbon-carbon double bond and a carbon-nitrogen double bond that conjugates with an aromatic group; and

(iii) at least one aromatic ring having at least 10 carbon atoms.

10. The porous insulating-film forming material as claimed in claim 6, wherein at least one of R_1 to R_{17} in formula (I') satisfies at least one of the following conditions (i) to (iii):

at least one of R_1 to R_{17} includes at least one of

(i) at least one carbon-carbon triple bond;

(ii) at least one of a carbon-carbon double bond and a carbon-nitrogen double bond that conjugates with an aromatic group; and

(iii) at least one aromatic ring having at least 10 carbon atoms.

11. A porous insulating film obtained by using an insulating-film forming material as claimed in claim 5.

12. A porous insulating film obtained by using an insulating-film forming material as claimed in claim 6.